Willamette National Forest Pilot Road Analysis

Appendix L

Roadless Values Process Paper

October 1998

Background

Roadless areas are those places on the Forest that are undeveloped lands within which there are no improved roads. Areas in an unroaded condition have been inventoried on the Forest at least three times; as part of the national Roadless Area Review and Evaluation (1973), the second, national Roadless Area Review and Evaluation (1979) and during the National Forest Management Act, Forest Plan development (1984 - 1989). In these progressive roadless inventories unroaded areas of the Forest were identified and mapped according to certain criteria based on size and adjacency to existing wilderness. In the RARE II inventory in 1984, 210,207 acres were identified as roadless and with potential for inclusion in the National Wilderness Preservation System. By the time the Forest Plan analysis was completed in 1989, 172,007 acres remained in this inventory.

Two wilderness designations by Congress since the RARE I inventory have also affected the amount of roadless lands on the Forest. The Oregon Wilderness Act in 1984 added approximately 84,930 acres to the Forest wilderness. The Opal Creek Wilderness and Scenic Recreation Act in 1996 will add approximately 12,800 acres to the Forest wilderness when all the procedural actions are finalized.

In recent years, the issue of unroaded lands on the National Forests has taken on different views and aspects than just the potential for inclusion in the National Wilderness Preservation System. In the broad sense, there is still a diversity of values regarding roadless areas and these values often are conflicting. The values associated with roadless can be associated with recreation, symbolism of people's value for wild places, the lifestyle of a community and a variety of ecological values. Many of these values can be met in roadless areas that do not meet the minimum size criteria (5,000 acres) of the RARE I and RARE II inventories. As the total amount of roadless area, not included in the wilderness system continues to decline on the Forest, there is increased interest on the values of smaller unroaded areas.

Key Questions and Process Description

The primary issue of the unroaded areas in this Forest Roads Analysis is the amount and location of unroaded areas on the Forest stratified by size of area and Forest Plan land allocation. The key question is, where are there significant aquatic, terrestrial wildlife or ecological values associated with unroaded areas?

The analysis process to address this issue was:

Inventoried roadless areas (RARE II and exclusions since 1984) were digitized. This map was overlaid with current Forest Plan land allocations to determine the amount of inventoried roadless in land allocations with a emphasis on the land in allocations that allowed timber harvest and allocations that precluded timber harvest.

To address the issue of other unroaded areas that might not have been identified in the RARE I or RARE II inventories because they were less than 5,000 acres (or not adjacent to existing wilderness), a moving windows analysis was done using the Forest transportation layer. The analysis identified those areas on the Forest where the existing road density is zero. This is similar to the analysis done to determine road density with one notable difference. The size of

the "window" used to determine road density was one mile which means that the road density for any single spot was based on roads within a one mile radius. For the unroaded analysis, the size of the "window" was reduced to .25 mile. The effect this has on the analysis is that the areas of zero road density in the unroaded analysis were significantly larger than those in the road density analysis. The rationale behind the .25 mile window was that the both the ecological values and the social values associated with roadless are impacted minimally once the distance from a road is over .25 mile. This is a generalization of course, but it supported by the wildlife analysis of how interior forest is impacted by road openings and the determination of different management levels within designated wilderness.

The unroaded map resulting from the procedure described above was further screen using information from the Forest vegetation data base (VEGIS). Stands with information indicating they had been harvested within the past 40 years were also excluded from the unroaded areas. In the majority of cases, these stands are old clear cuts and regeneration harvest units with roads and/or landings along one edge. Although these areas might recover over time to the point where they could provide social and ecological values similar to those in unroaded and unharvested areas, at the current time, the recent harvest activity is the dominant characteristic of these areas.

The last step was screening the resulting unroaded polygons by size. The original intent was to not simply screen, but to stratify the unroaded polygons by size (1,000 acre increments) beginning at 1,000 and proceeding upward until all areas were accounted for. Due to time limitations for the analysis, however, the screening was simplified to just identifying all areas greater than 1,000 acres. One thousand was selected as the minimum size based on a subjective assessment of public comments on roadless areas from a variety of sources and general wildlife input. Another screen that was considered, but not done due to a lack of time was the size to perimeter ratio of each area. This would potentially eliminate narrow areas between parallel roads.

The question about significant ecological values in the inventoried roadless areas and in the unroaded areas was not directly addressed in this analysis. An indirect answer to this question is the determination of how many acres of roadless or unroaded are within land allocations that preclude timber harvest. The assumption being that the issue is not a high priority to address in those areas where current direction or policy preclude any further road access. For the areas that are roadless or unroaded and do remain in land allocations that allow timber harvest and presumably road construction, this question was addressed based on a qualitative evaluation of the areas. It should be noted that inventoried roadless areas in Key Watersheds can not be roaded under current Forest Plan direction.

Results and Interpretation

(Note - The following results and acreages do not include designated wilderness on the Forest.)

Inventoried Roadless Areas - As previously mentioned the inventoried roadless areas mapped in in 1984 total 210,509 acres (this figure is about 300 acres greater than previously reported in RARE II and the Forest Plan FEIS due to differences in mapping systems used to calculate the area). The area that is still roadless in these areas as of 1998 is 112,166 acres.

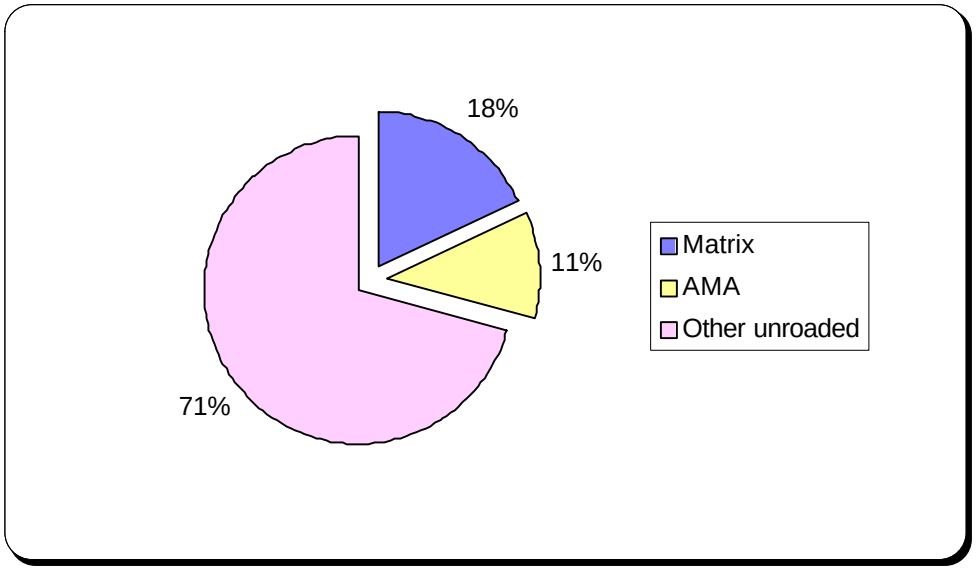
When the original area of 210,509 acres was overlaid with current Forest Plan land allocations, 45,164 acres or about 21% were in land allocations that allowed timber harvest (matrix and adaptive management area categories). The remaining 165,345 acres or about 79% are in land allocations that do not allow programmed timber harvest (late successional reserves, administratively withdrawn categories). Based on recent experience with site-specific riparian reserve mapping, it is likely that the 45,164 acres would be reduced further once all riparian reserves are identified.

Unroaded Areas - The moving window analysis of the unroaded areas resulted in a total of 303,579 acres that were identified as unroaded and not harvested within the past 40 years and were greater than 1,000 acres. A visual evaluation of the unroaded polygons shows that there are several of the polygons have elongated, narrow necks and peninsulas that might have limited ecological value (connectivity) but would probably not satisfy many other ecological or social roadless values that are generally associated with blocks of land where road influences are less noticeable in the interior.

Of the total acres of unroaded after the screening, 55,062 acres or about 18% are in the matrix category of land allocations or those that allow timber harvest (see Figure 1). When Adaptive Management Area acres are considered, the total acres of unroaded increases to 88,299 or about 29% of the total unroaded. The AMA land allocation does allow for timber, however, several of the large unroaded blocks are in the HJ Andrews Research Forest where limited harvesting is anticipated. The remaining unroaded areas greater than 1,000 acres, totals 215,280 acres or 71% of the total and is in land allocations that preclude programmed timber harvest and where there is no identified future needs for additional road access.

. Total Unroaded Lands on the Forest

Figure 1



The most immediate issue for both the inventoried roadless areas and the unroaded areas identified through the GIS analysis are for the 45,164 acres and 88,299 acres in allocations

where road access is currently allowed under current Forest Plan direction. A quick check of the larger blocks that are identified revealed that many of the areas have large areas of younger aged stands or noncommercial stands and/or are on landforms that are very difficult to road (steep ground, areas with slumps, etc.). A notable exception is the Moose Creek area in the South Santiam watershed.

Our recommendation is that the unroaded map continue to be refined and used at the watershed level, to identify areas of significant ecological values and where they overlap with the unroaded areas.

References

Rakestraw, Lawrence and Mary. 1991. *History of the Willamette National Forest.*

USDA Forest Service. 1990. *Land and Resource Management Plan, Willamette National Forest.*